

## REMARKS

Claims 1-20, and 22-27 are pending in the present application.

This Amendment is in response to the Office Action mailed April 24, 2001. In the Office Action, the Examiner objected to the title and abstract, provisionally rejected Claims 1-20 and 22-27 under 35 U.S.C. § 101 for double patenting, and rejected Claims 1-20 and 22-27 under 35 U.S.C. § 102. In response, Applicant has amended Claims 1, 3, 11, 13, 22, and 24 and add new claims 28 and 29. Applicant submits that the new claims 28 and 29 introduce no new matter. Support for new claims 28 and 29 is found in Figure 4 and Specification on page 17 (lines 6-24), page 18 (lines 1-5), and page 21 (lines 10-13). Reconsideration in light of the amendments and remarks made herein is respectfully requested.

### **I. TITLE**

In the Office Action, the examiner objected to the amended title. In particular, the Examiner stated that the title of the invention is not descriptive. In response, Applicant has amended the title to change to DESIGN OPTIMIZATION OF CIRCUITS BY SELECTING DESIGN POINTS ON PARAMETER FUNCTIONS TO IMPROVE OPTIMIZING PARAMETERS OF CIRCUITS WITHIN DESIGN CONSTRAINTS.

Therefore, Applicant respectfully requests the objection to the title be withdrawn.

### **II. ABSTRACT**

In the Office Action, the Examiner objected to the Abstract. In response, Applicant has amended the Abstract to recite the novelty of the invention. Therefore, Applicant requests the objection to the Abstract be withdrawn.

### III. REJECTION UNDER 35 U.S.C. § 102(E)

In the Office Action, the Examiner rejected Claims 1-20, and 22-27 under 1) 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,838,947 issued to Sarin ("Sarin") or U.S. Patent No. 5,880,967 issued to Jyu et al. ("Jyu"), 2) under § 102(a) as being anticipated by U.S. Patent No. 5,835,380 issued to Roething ("Roething") and 3) under § 102(b) as being anticipated by U.S. Patent No. 5,619,420 issued to Breid ("Breid"). Applicant respectfully traverses the rejections for the following reasons.

Applicant reiterates the arguments against the rejections as set forth in the previous response. In addition, Applicant submits that Sarin, Jyu, Roething and Breid, taken alone or in any combination, do not disclose, suggest, or render obvious selecting initial design points having a first sum of the constraint set and a second sum of the optimizing set such that the first sum satisfies the design constraints; and (2) selecting new design points for the parameter functions such that the second sum is improved within the design constraints. These aspects of the invention are supported in the specification on page 19 (lines 6-11), page 20 (lines 19-24), and page 21 (lines 1-9) and is recited in amended Claims 1, 11, and 22 as follows:

“... initial design points on the parameter functions having a first sum of the constraint set and a second sum of the optimizing set such that the first sum satisfies the design constraints; and ... new design points on the parameter functions such that the second sum is improved within the design constraints.” (Amended Claims 1, 11, and 22)

Applicant has also amended Claims 3, 13, and 24 to correct minor informalities.

Therefore, Applicant believes that independent Claims 1, 11, and 22 and their respective dependent Claims are distinguishable over the cited prior art references. Accordingly, Applicant respectfully requests the rejections under 35 U.S.C. § 102(b) be withdrawn.

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

### ABSTRACT

Please delete the Abstract and insert the following in lieu thereof:

--One embodiment of the present invention is a method and machine readable medium for determining optimal values of design parameters of a subsystem to meet design constraints. The subsystem includes a number of circuits. A parameter function is created for the corresponding circuits. The parameter function represents a relationship among design parameters of the subsystem. The design parameters include constraint and optimizing sets. Initial design points for the parameter functions having a first sum of the constraint sets and a second sum of the optimizing sets are selected to such that the first sum satisfies the design constraints. New design points for the parameter functions are selected such that the second sum is improved while the first sum is within the design constraints.--

### CLAIMS

- 1           1.     (THREE TIMES AMENDED) A method comprising:
  - 2           (a) creating parameter functions for a plurality of circuits in a subsystem, the subsystem
  - 3           having design constraints, each one of the parameter functions corresponding to each one of the
  - 4           circuits, the parameter functions representing a relationship among [the] design parameters of the
  - 5           subsystem, the design parameters including constraint and optimizing sets;
  - 6           (b) selecting initial design points [for] on the parameter functions [to satisfy] having a
  - 7           first sum of the constraint set and a second sum of the optimizing set such that the first sum
  - 8           satisfies the design constraints; and
  - 9           (c) selecting new design points [for] on the parameter functions [to optimize design
  - 10          parameters] such that the second sum is improved within the design constraints.

- 1           3.     (AMENDED) The method of claim 2 wherein [the design parameters include
- 2           constraint and optimizing sets,] the constraint set [including] includes constraint parameters

3 having values selectable to meet the design constraints[,] and the optimizing set [including]  
4 includes optimizing parameters having values to be optimized.

1 11. (TWICE AMENDED) A machine readable medium having embodied thereon a  
2 computer program for processing by a machine, the computer program comprising:

3 (a) a first code segment to create parameter functions for a plurality of circuits in a  
4 subsystem, the subsystem having design constraints, each one of the parameter functions  
5 corresponding to each one of the circuits, the parameter functions representing a relationship  
6 among [the] design parameters of the subsystem, the design parameters including constraint and  
7 optimizing sets;

8 (b) a second code segment to select initial design points [for] on the parameter  
9 functions [to satisfy] having a first sum of the constraint set and a second sum of the optimizing  
10 set such that the first sum satisfies the design constraints; and

11 (c) a third code segment to select new design points [for] on the parameter functions  
12 [to optimize design parameters] such that the second sum is improved within the design  
13 constraints.

1 13. (AMENDED) The machine readable medium of claim 12 wherein [the design  
2 parameters include constraint and optimizing sets,] the constraint set [including] includes  
3 constraint parameters having values selectable to meet the design constraints[,] and the  
4 optimizing set [including] includes optimizing parameters having values to be optimized.

1 22. (THREE TIMES AMENDED) A system comprising:

2 a memory for storing program instructions;

3 a processor coupled to the memory to execute the program instructions, the program  
4 instructions when executed by the processor interacting with tools provided by a design  
5 environment causing the processor to at least

6 (a) create parameter functions for a plurality of circuits in a subsystem, the subsystem  
7 having design constraints, each one of the parameter functions corresponding to each one of the  
8 circuits, the parameter functions representing a relationship among [the] design parameters of the  
9 subsystem, the design parameters including constraint and optimizing sets,

- 10 (b) select initial design points [for] on the parameter functions [to satisfy] having a  
11 first sum of the constraint set and a second sum of the optimizing set such that the first sum  
12 satisfies the design constraints; and
- 13 (c) select new design points [for] on the parameter functions [to optimize design  
14 parameters] such that the second sum is improved within the design constraints.

1 24. (AMENDED) The system of claim 22 wherein [the design parameters include  
2 constraint and optimizing sets,] the constraint set [including] includes constraint parameters  
3 having values selectable to meet the design constraints[, and the optimizing set [including]  
4 includes optimizing parameters having values to be optimized.

1 28. (NEW) A method comprising:

2 (a) generating first and second parameter functions for a circuit corresponding to first and  
3 second technologies, each of the first and second parameter functions relating a constraint  
4 parameter and an optimizing parameter;

5 (b) selecting a first initial design point and a first new design point on the first parameter  
6 function such that the first new design point corresponds to a first improved optimizing  
7 parameter within a design constraint;

8 (c) selecting a second initial design point and a second new design point on the second  
9 parameter function such that the second new design point corresponds to a second improved  
10 optimizing parameter within the design constraint; and

11 (d) selecting the first technology if the first improved optimizing parameter is better than  
12 the second improved optimizing parameter, else selecting the second technology.

1 29. (NEW) The method of claim 28 wherein the first technology is a dynamic  
2 technology and the second technology is a static technology.


**CONCLUSION**

In view of the amendments and remarks made above, it is respectfully submitted that pending claims are in condition for allowance, and such action is respectfully solicited.

Respectfully submitted,

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**CERTIFICATE OF MAILING**

*I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on: October 24, 2001.*

  
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Barbara Hayashi

October 24, 2001  
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Date